We claim:

1. A process for the continuously operated purification by distillation of the methanol used as solvent in the synthesis of propylene oxide by reaction of a hydroperoxide with propylene, with the methoxypropanols being separated off simultaneously, wherein the solvent mixture obtained in the synthesis is separated in a dividing wall column into a low-boiling fraction comprising methanol, an intermediate-boiling fraction comprising the methoxypropanols as azeotrope with water and a high-boiling fraction comprising water and propylene glycol.

2. A process as claimed in claim 1, wherein methanol is taken off via the top of the column, the methoxypropanols are taken off as azeotrope with water from the side offtake of the column and water is taken off at the bottom.

3. A process as claimed in claim 1 or 2, wherein the dividing wall column has from 15 to 60 theoretical plates.

4. A process as claimed in any of claims 1 to 3, wherein the pressure is from 1 to 15 bar and the distillation temperature is from 30 to 140°C, in each case measured at the top of the column.

5. A process as claimed in any of claims 1 to 4, wherein the dividing wall column is configured as two thermally coupled columns.

6. A process as claimed in claim 5, wherein the solvent mixture is separated into the low-boiling, intermediate-boiling and high-boiling fractions in the column downstream of the feed column, or

the low-boiling and high-boiling fractions are taken off from the solvent mixture in the feed column and the intermediate-boiling fraction is taken off in the downstream column, or

the high-boiling fraction is taken off from the solvent mixture in the feed column and the low-boiling and intermediate-boiling fractions are taken off in the downstream column, or

the low-boiling fraction is taken off from the solvent mixture in the feed column and the intermediate-boiling and high-boiling fractions are taken off in the downstream

column.

7. A process as claimed in claim 5 or 6, wherein the liquid stream taken from the bottom of one of the coupled columns is partly or completely vaporized before it is passed to the other column, and the gaseous stream taken off at the top of one of the coupled columns is partly or completely condensed before it is passed to the other column.

8. A process as claimed in claim 5 or 6, wherein the stream taken from the bottom of one of the coupled columns is partly or completely vaporized before it is passed to the other column, or the stream taken off at the top of one of the coupled columns is partly or completely condensed before it is passed to the other column.

9. A process as claimed in any of claims 1 to 8, wherein the propylene oxide is prepared by a process comprising at least the steps (i) to (iii)

(i) reaction of the hydroperoxide with propylene,
(ii) separation of the unreacted hydroperoxide from the mixture resulting from step (i),
(iii) reaction of the hydroperoxide which has been separated off in step (ii) with propylene,

with an isothermal fixed-bed reactor being used in step (i), an adiabatic fixed-bed reactor being used in step (iii), a separation apparatus being used in step (ii) and hydrogen peroxide being used as hydroperoxide and the organic compound being brought into contact with a heterogeneous catalyst during the reaction.

10. A process as claimed in claim 9, wherein the heterogeneous catalyst comprises the zeolite TS-1.